WHAT IS CLAIMED IS:

1. A bit error rate (BER) testing apparatus, comprising:

a computer that commands a BER test through a BER test command, receives a BER value according to the BER test command, and displays the BER value;

a roadside equipment that transmits a BER test message according to the BER test command; and

an on-board equipment that compares the BER test message received from the roadside equipment with a previously stored BER test message to compute the BER value and transmits the BER value to the computer via the roadside equipment.

2. The apparatus of claim 1, wherein the BER test command is inputted to a local server and transmitted from the local server to the roadside equipment.

3. The apparatus of claim 1, wherein the roadside equipment comprises:

a switch that switches an operation mode of the roadside equipment according to a manipulation of an operator;

a central processing unit (CPU) that controls the operation mode of the roadside equipment according to the manipulation of the switch or an output generated from the BER test command;

a modem that performs a cyclic redundancy code (CRC) check on the BER test message to determine whether an error has occurred and determines whether the BER test message with the error is to be discarded under the control of the CPU; and

a memory that stores the BER test message.

4. The apparatus of claim 1, wherein the on-board equipment comprises:

a switch that switches an operation mode of the on-board equipment according to a manipulation of an operator;

a central processing unit (CPU) that controls the operation mode of the on-board equipment according to the output of the switch or an output generated from the BER test command;

a modem that performs a cyclic redundancy code (CRC) check on the BER test message to determine whether an error has occurred and determines whether the BER test message with the error is to be discarded under the control of the CPU;

a memory that stores the BER test message and a measured BER value;

an input unit that receives an input from a user and transmits it to the CPU; and

a display unit that displays a status of the on-board equipment and user information under the control of the CPU.

5. The apparatus of claim 1, wherein the BER test message comprises:

one frame control message channel (FCMC) positioned at the front of the BER test message, the FCMC having system information and exclusively used for a backward link; and

a plurality of message data channels (MDCs) comprising data to be transmitted between the roadside equipment and the on-board equipment, the plurality of MDCs set as a certain value conforming to a dedicated short range communication (DSRC) standard and used for the backward link and a forward link.

6. The apparatus of claim 5, wherein each of the plurality of MDCs comprises:

a preamble field (PR) positioned at the front of the MDC;

a channel synchronization word field (CSW) that provides a channel synchronization;

a media access control (MAC) field that indicates whether the MDC is forward data or backward data and indicates a data length;

a MAC service data unit field (MSDU) that contains data known commonly by the roadside equipment and the on-board equipment; and

a cyclic redundancy error check sequence (CRC) field used to detect whether there is an error in any field other than the PR and the CSW fields.

7. A bit error rate (BER) testing method, comprising:

recognizing, with a roadside equipment and an on-board equipment, an operation

mode determined by an output of a switch;

starting a BER test between the roadside equipment and the on-board equipment according to a BER test command, if the operation mode is a BER test mode;

transmitting a BER test message from the roadside equipment to the on-board equipment and performing a BER check on the received BER test message with the on-board equipment; and

reporting a BER value according to the BER check.

8. The method of claim 7, wherein the switch is operated by a manual operation of an operator.

9. The method of claim 7, wherein starting the BER test further comprises:

receiving with the roadside equipment an ID of the on-board equipment performing the BER test and a BER testing initiation message containing a number identifying an amount of data to be received within the BER test message, according to the BER test command;

transmitting the BER testing initiation message from the roadside equipment to the on-board equipment; and

storing in a memory of the on-board equipment the number contained in the BER testing initiation message; and

transmitting a response to the receipt of the BER testing initiation message from the on-board equipment to the roadside equipment.

10. The method of claim 7, wherein performing the BER test further comprises:

comparing data of the received BER test message with data of a standard BER test message already stored in a memory of the on-board equipment, when the data of the BER test message is received;

checking whether an error has occurred; and

computing the BER value based on a total number of received data elements and a number of the received data elements containing the error.

11. The method of claim 7, wherein reporting the BER value further comprises:

transmitting the BER value from the on-board equipment to the roadside equipment;

transmitting the BER value received by the roadside equipment to a computer and responding to the receipt of the BER value from the roadside equipment to the on-board equipment, if a tester inputs the BER test command to the computer and the computer commands a start of the BER test to the roadside equipment; and

transmitting the received BER value from the roadside equipment to a local server and responding to the receipt of the BER value from the roadside equipment to the on-board equipment, if the tester inputs the BER test command to the local server and the local

and responding to the receipt of the BER value from the roadside equipment to the on-board equipment, if the tester inputs the BER test command to the local server and the local server commands the start of the BER test to the roadside equipment.

12. The method of claim 11, further comprising:

storing the BER value in a memory of the on-board equipment, if no response to the receipt of the BER value is received from the roadside equipment; and

transmitting the stored BER value to the roadside equipment, when the roadside equipment requests the BER value.

13. The method of claim 7, wherein the BER test message comprises:

one frame control message channel (FCMC) positioned at the front of the BER test message, the FCMC having system information and exclusively used for a backward link; and

a plurality of message data channels (MDCs) comprising data to be transmitted between the roadside equipment and the on-board equipment, the plurality of MDCs set as a certain value conforming to a dedicated short range communication (DSRC) standard and used for the backward link and a forward link.

14. The method of claim 13, wherein each of the plurality MDCs comprises:

a preamble field (PR) positioned at the front of the MDC;

a channel synchronization word field (CSW) that provides a channel synchronization;

a media access control (MAC) field that indicates whether the MDC is forward data or backward data and indicates a data length;

a MAC service data unit field (MSDU) that contains data known commonly by the roadside equipment and the on-board equipment; and

a cyclic redundancy error check sequence field used to detect whether there is an error in any field other than the PR and the CSW fields.

15. The method of claim 7, further comprising:

starting the BER test between the roadside equipment and a plurality of on-board equipments within a service area of the roadside equipment, according to the BER test command;

concurrently receiving the BER test message with the plurality of on-board equipments;

concurrently performing a BER check on the received BER test message with the plurality of on-board equipments; and

reporting the BER value according to the BER check from each of the plurality of

on-board equipments to the roadside equipment..

16. A bit error rate (BER) testing method of a dedicated short range communication (DSRC) intelligent transport system (ITS), comprising:

transmitting a BER testing initiation message from a PC or a local server to a roadside equipment;

recognizing an operation mode of the roadside equipment as a BER test mode, based on the BER testing initiation message, and transmitting the BER testing initiation message to an on-board equipment;

recognizing the operation mode of the on-board equipment as the BER test mode, based on the BER testing initiation message;

storing a number identifying an amount of data to be received by the on-board equipment, included in the BER testing initiation message;

transmitting a response to the BER testing initiation message from the on-board equipment to the roadside equipment;

transmitting the response to the BER testing initiation testing message to the PC or the local server and transmitting a BER test message from the roadside equipment to the on-board equipment;

comparing data of the BER test message received by the on-board equipment with data of a standard BER test message, previously stored in a memory of the on-board equipment, and measuring a BER value;

transmitting the measured BER value from the on-board equipment to the roadside equipment;

transmitting the BER value to the PC or the local server and transmitting a response to receipt of the BER value to the on-board equipment; and

storing the BER value in the memory of the on-board equipment, if no response is received indicating the receipt of the BER value.

17. The method of claim 16, wherein the BER test message comprises:

one frame control message channel (FCMC) positioned at the front of the BER test message, the FCMC having system information and exclusively used for a backward link; and

a plurality of message data channels (MDCs) comprising data to be transmitted between the roadside equipment and the on-board equipment, the plurality of MDCs set as a certain value conforming to a DSRC standard and used for the backward link and a forward link.

18. A communication receiver, comprising:

a radio frequency (RF) interface that converts a received RF signal to a baseband signal;

a switch that determines an operational mode of the receiver in accordance with an output of the switch;

a processor that controls a bit error rate (BER) test of the receiver in accordance with the operational mode of the receiver;

a modem that determines a BER value, resulting from the BER test, based on a cyclic redundancy code (CRC) check performed on a BER test message within the received RF signal;

a memory that stores a standard test message for comparison with a received message generated by the CRC check; and

a display that displays the BER value, wherein

the BER value is based on the amount of difference between the standard test message and the received message.

19. The receiver of claim 18, wherein the operational mode is additionally determined by a BER test initiating message.